

1 gctgtcagcg ctgagcacag cgcccaggga gaggacaga cagccggcgtg catgggacag  
 61 cggaaacccag agtgagaggg gagtgggcag gacagacaga cagcaggggc ggaagcagag  
 121 acagacagcg gggacagggg ggcgacacg gacatcgaca gccatagat tcctaaccaca  
 181 gggagccccg gcccctctcg ccgcttccca cccagacgg agcgggggaca ggtgcccag  
 241 catcctccca cccgccctcc ccgtcctgcc tcctcggccc ctgccagctt ccccgccttg  
 301 agcacgcagg gcgtccgagg acgcgcctgg cctccgcacc cgcctcatg gaggccgtgg  
 361 agaccgggga acggcccacc ttccggagcct gggactacgg ggtctttgcc ctcatgctcc  
 421 tgggtgtccac tggcatcggg ctgtgggtcg ggctggctcg gggcggggcag cgcagcgcctg  
 481 aggaattctt caccgggggc cgggcctgg cggccctgcc cgtgggcctg tcgctgtctg  
 541 ccagcttcat gtcggccgtg caggtgctgg gcgtgccgtc ggaggcctat cgctatggcc  
 601 tcaagtctct ctggatgtgc ctgggccagc ttctgaactc ggtcctcacc gccctgctct  
 661 tcatgcccgt cttctaccgc ctgggcctca ccagcaccta cgagtacctg gagatgcgt  
 721 tcagccgcgc agtcggctc tcggggactt tgcagtaaat tgtagccacg atgctgtaca  
 781 ccggcatcgt aatctacgca ccggccctca tcctgaacca agtgaccggg ctggacatct  
 841 gggcgtcgct cctgtccacc ggaattatct gcaccttcta caccgctgtg ggcggcatga  
 901 aggtgtggt ctggactgat gtgttccagg tcgtggtgat gctaaagtggc ttctgggttg  
 961 tcctggcacg cgggtgtcatg cttgtgggag ggcgccgcca ggtgctcacg ctggcccaga  
 1021 accactcccg gatcaacctc atggacttta accctgacc gaggagccgc tatacatctt  
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 1201 accaggtcgg cctgttctcg atcgtgtcca gcgtgcctg ctgtggcatc gtcagtgttg  
 1261 tgttctacac tgactgcgac cctctcctcc tggggcgcat ctctgcccc gaccagtaca  
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 1801 ctctctcagt caacgcctct ggctcctgg acccgctct cctccctgct aacgactcca  
 1861 gcaggggccc cagctcagga atggacgcca gccgacccgc cttagctgac agcttctatg  
 1921 ccattctcta tctctattac ggtgccctgg gcacgtgac cactgtgctg tgcggagccc

Figure 1

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MEAVETGERPTFGAWDYGVFALMLLVSTGIGLWVGLARGGQRSA  
EDFFTGGRRLAALPVGLSLSAFMSAVQVLGVPSEAYRYGLKFLMMCLGQLLSVLTA  
LLFMPVFYRLGLTSTYEYLEMRFSRAVRLCGTLQYIVATMLYTGIVYAPALIINQVT  
GLDIWASLLSTGIICTFFYTAVGGMKAVVWTDVFQVVVMLSGFWVVLARGVMLVGGPRQ  
VLTIAQNHSRINLMDENPDPRSRYTFWTFVGGTLVWLSMYGVNQAVQRYVACRTEK  
QAKLALLINQVGLFLIVSSAACCGIVMFVFYTDGTLGRI SAPDQYMPLLVLDIFE  
DLPGVPGFLFLACAYSGTLSTASTSINAMAAVTVEDLIKPRLSLAPRKLVIISKGLSL  
IYGSACLTVAALSSLLGGVLQGSFTVMGVI SGPLLGAFLGMFLPACNTPGVLAGLG  
AGLALSLWVALGATLYPPSEQTMRVLPSSAARCVALS VNASGLLDPALLPANDSSRAP  
SSGMDASRPALADSFYAI SYLYYGALGTLTTVLCGALISCLTGPTKRSTLAPGLLWWD  
LARQTASVAPKEEVAILDDNLVKGPEELPTGNKKPPGFLPTNEDRLFFLGQKELEGAG  
SWTPCVGHDGGRDQQETNL

# Human Sodium/Iodide Symporter

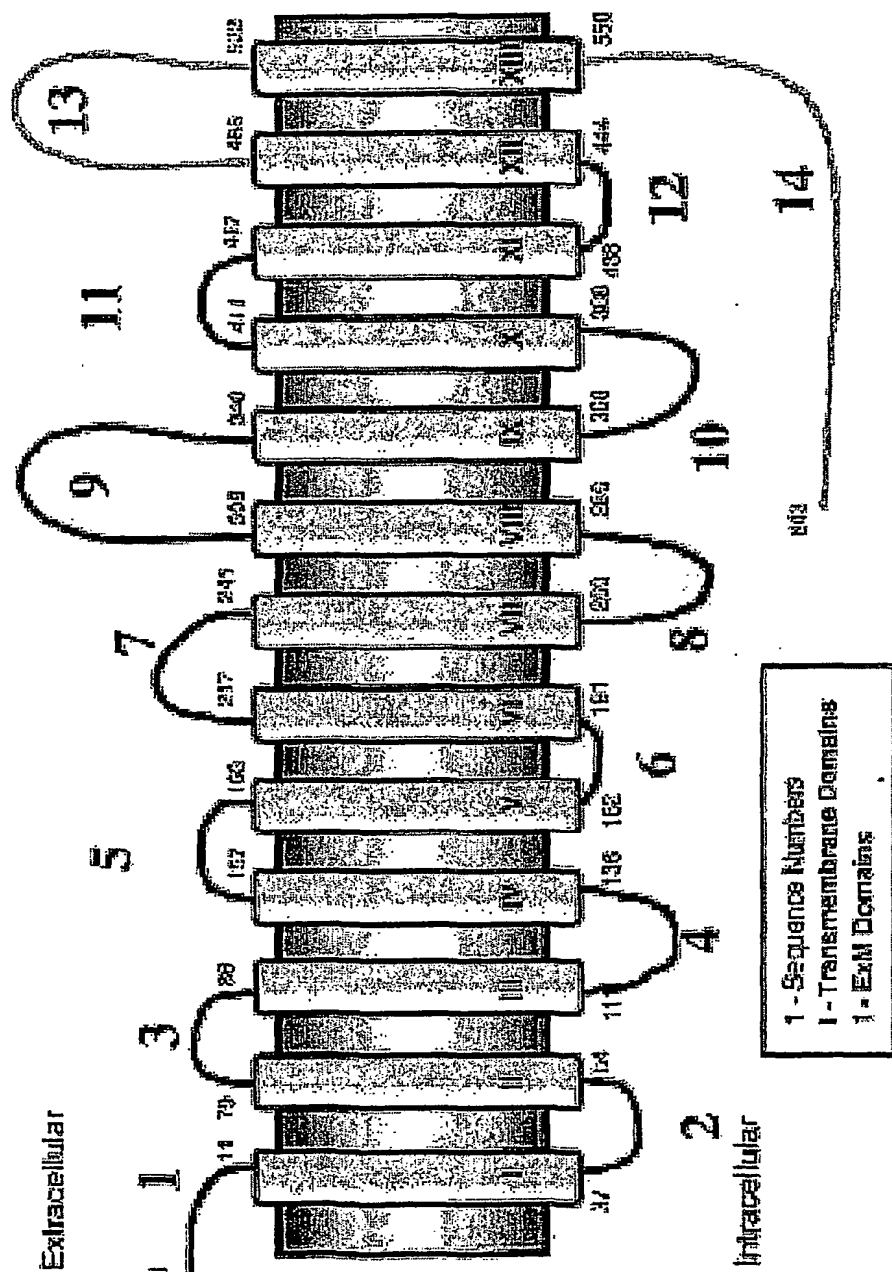


Figure 3

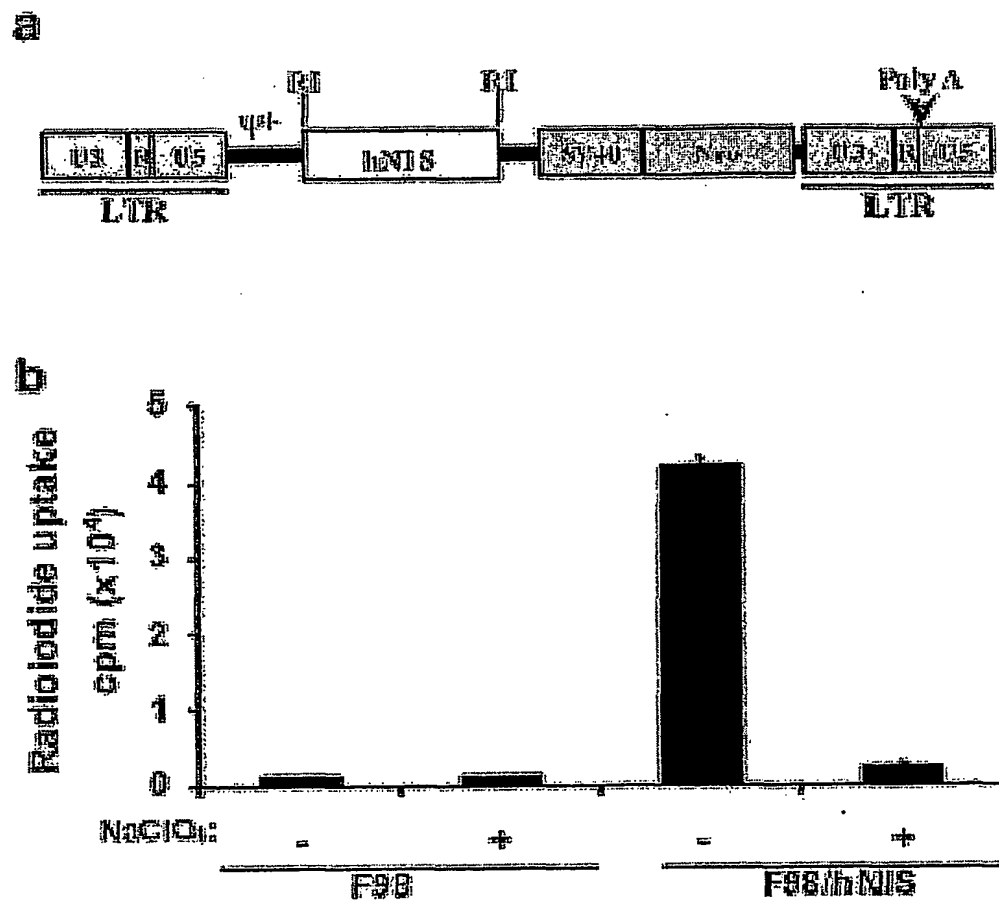


Figure 4

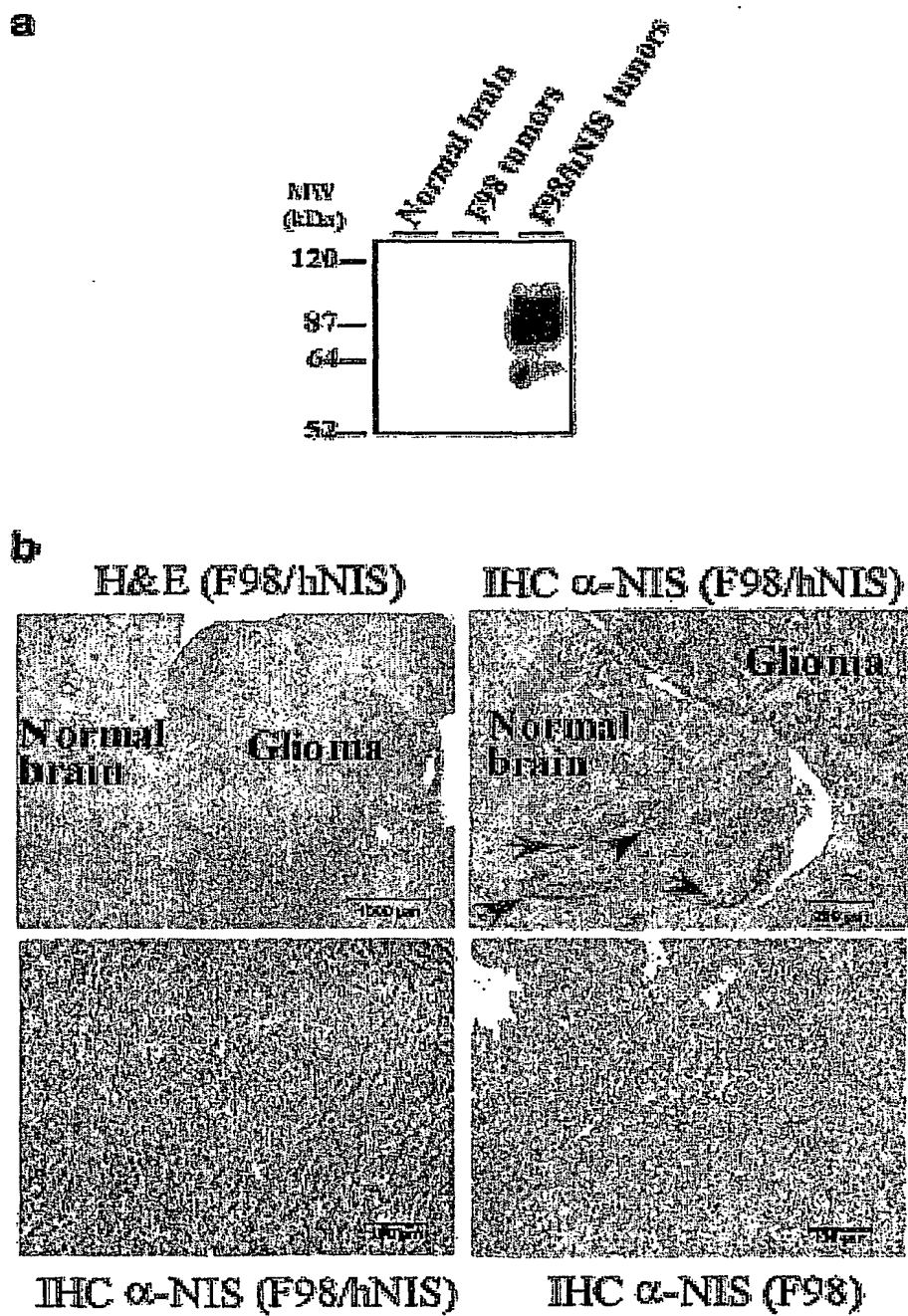


Figure 5

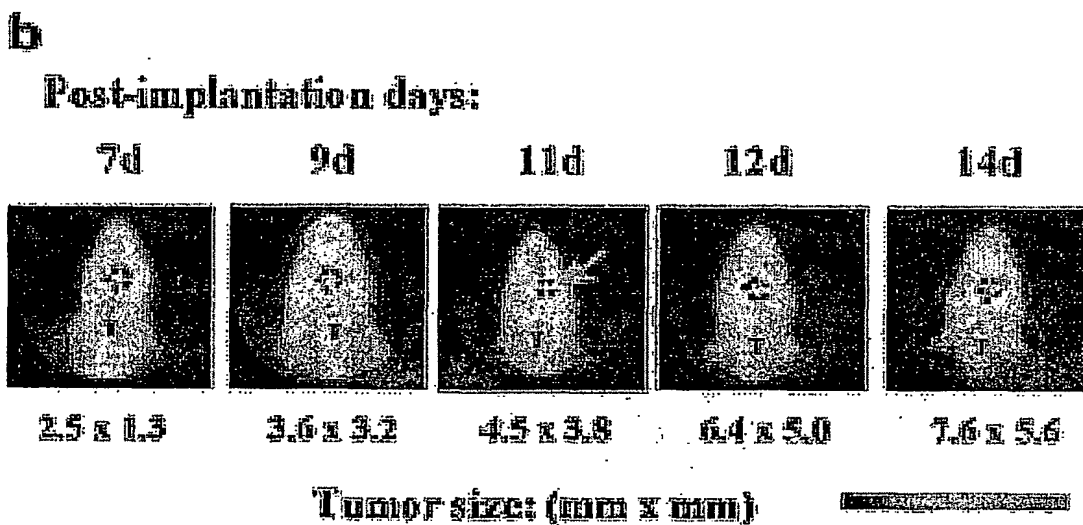
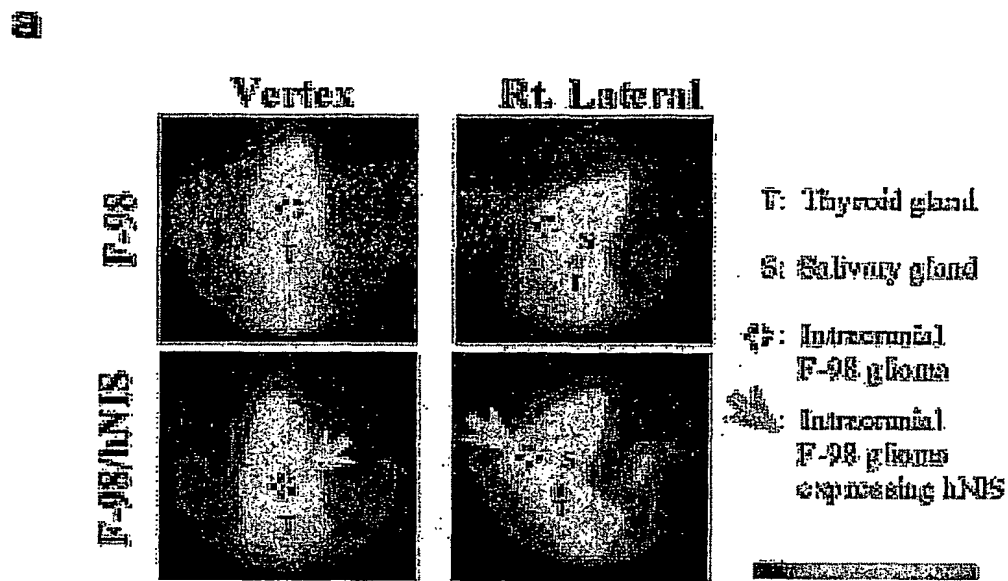


Figure 6

**a**Post-injection : 5 min  
of I-123

1 hr

4 hr

24 hr

37 hr

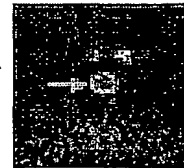
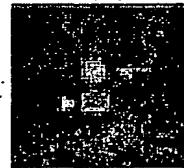
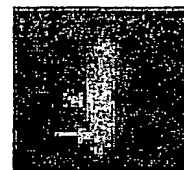
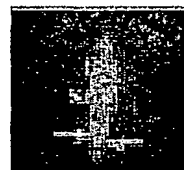
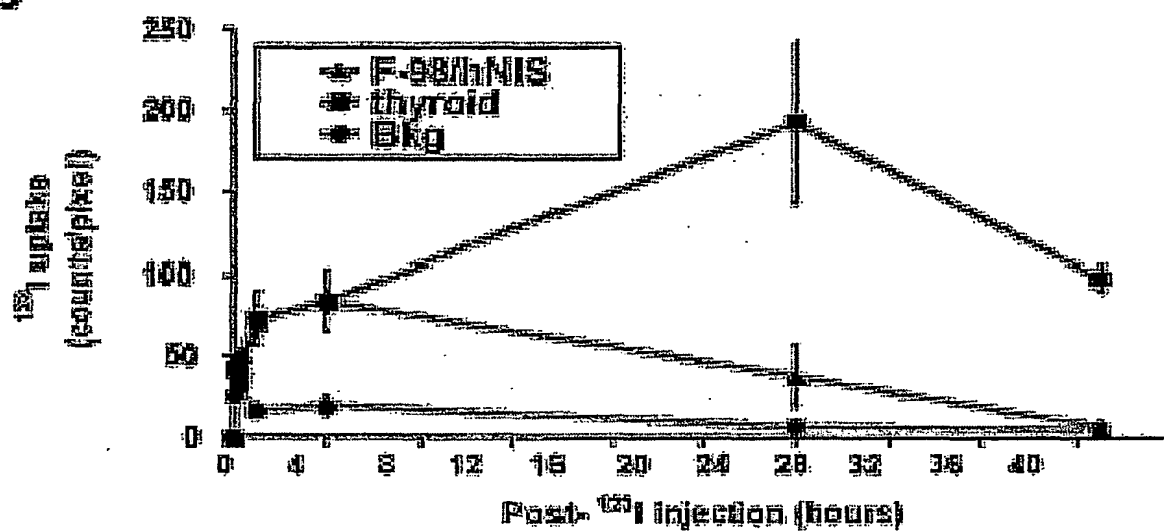
Pinhole  
(Vertex)Planar  
(Ventral)**b**

Figure 7

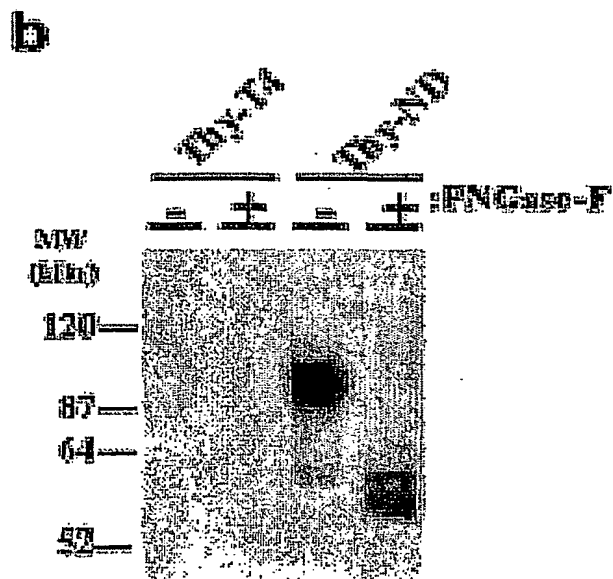
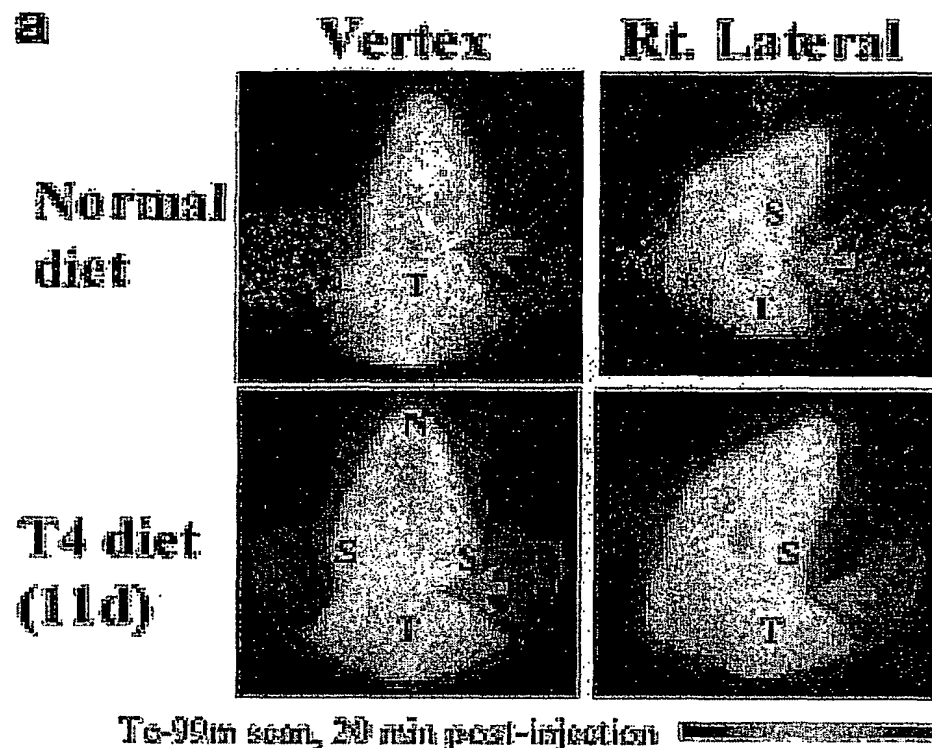


Figure 8



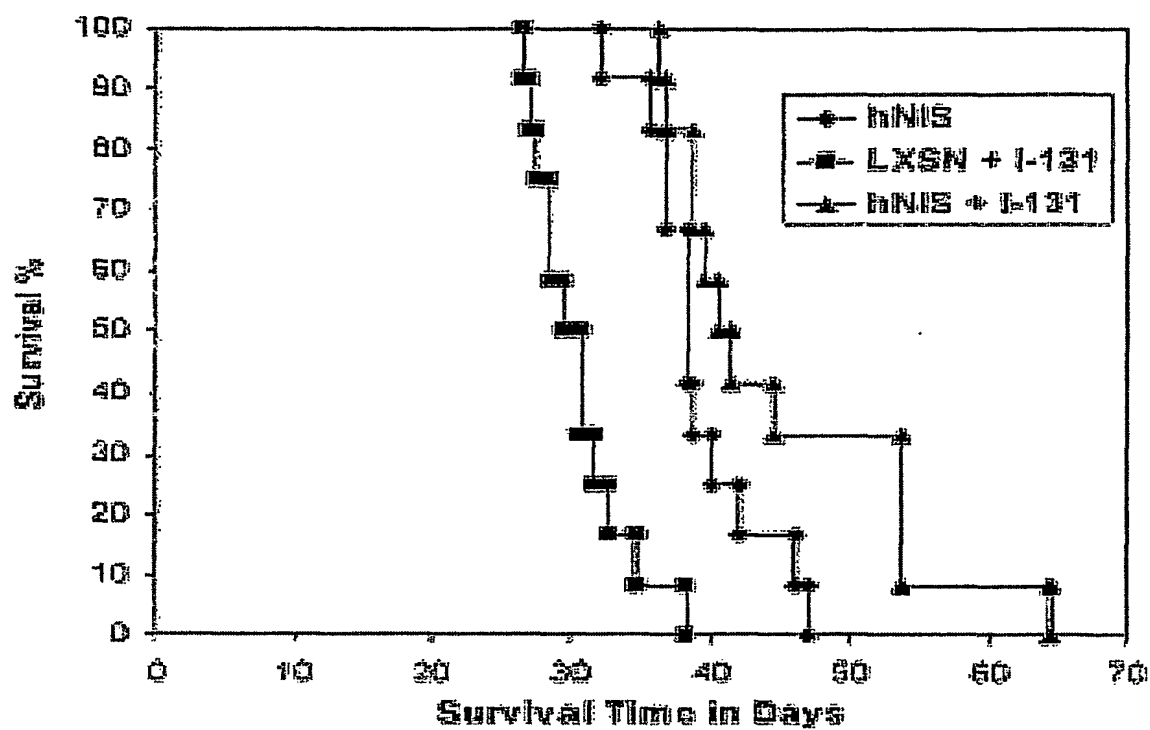
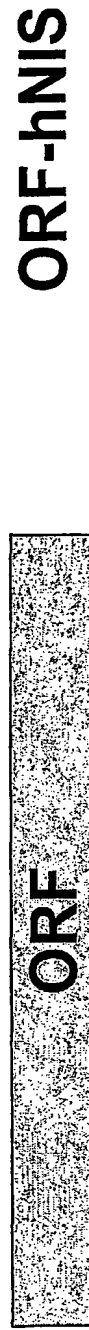


Figure 9

# ORF-hNIS & ORF-hNIS-(lys)<sub>10</sub>

WO 2004/000236



NTR: non-translated region  
ORF: open reading frame

Figure 10

# PCR Cloning of ORF-hNIS & ORF-hNIS-(lys)<sub>10</sub>

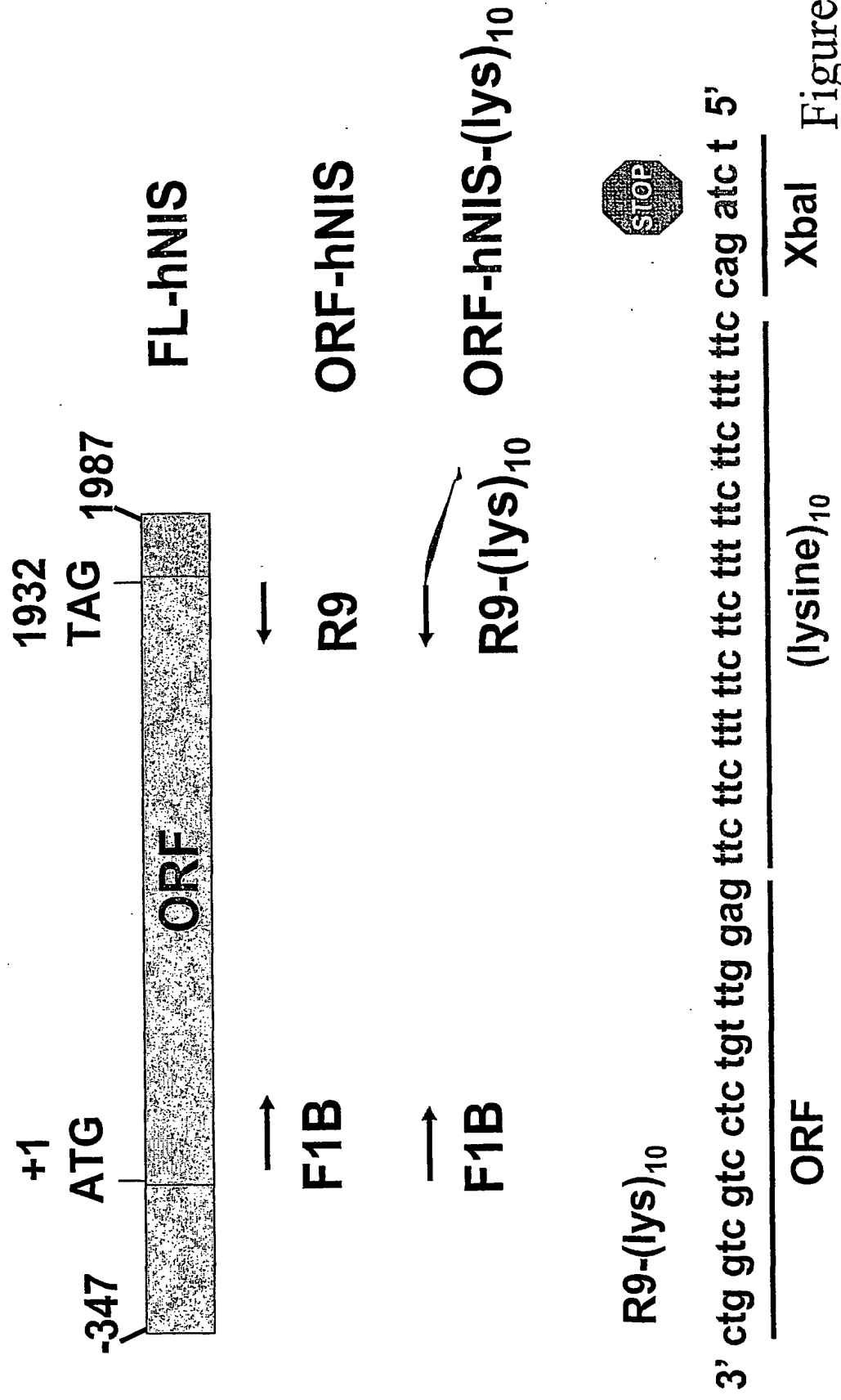


Figure 11

# ORF-hNIS-(Lys)<sub>10</sub> has 3 fold increase of RAIU activity than ORF-hNIS

WO 2004/000236

PCT/US2003/020111

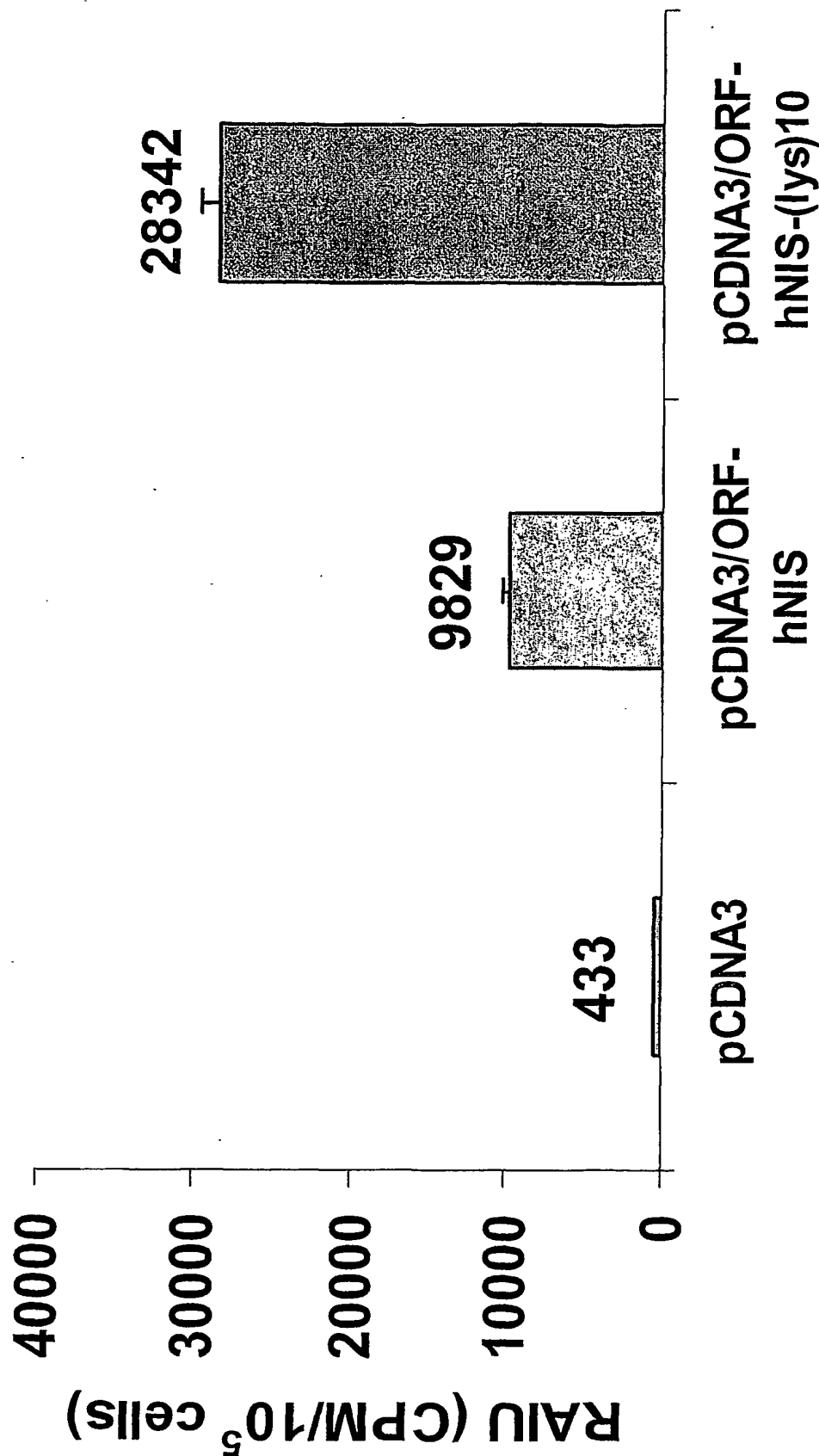


Figure 12

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